

WHAT IS CLAIMED IS:

1. A composition comprising an immunogenic peptide having a HLA-A3.2 binding motif, which immunogenic peptide has between about 9 and about 10 residues and the following residues, from the N-terminus to the C-terminus:

a first conserved residue selected from the group consisting of L, M, I, V, S, A, T, F, C, G, D and E;

and a second conserved residue of K, R, Y, H and F; wherein the first and second conserved residues are separated by 6 to 7 residues.

2. The composition of claim 1, wherein the first conserved residue is at the second position from the N-terminus.

3. A composition comprising an immunogenic peptide having a HLA-A1 binding motif, which immunogenic peptide has between about 9 and about 10 residues and the following residues, from the N-terminus to the C-terminus:

a first conserved residue of T, S and M; and

a second conserved residue of D, E, A, S and T;

a third conserved residue of Y;

wherein the first and second conserved residues are adjacent and the second and third conserved residues are separated by 5 or 6 residues.

4. The composition of claim 3, wherein the first conserved residue is at the second position from the N-terminus.

5. A composition comprising an immunogenic peptide having a HLA-A1 binding motif, which immunogenic peptide has between about 9 and about 10 residues and the following residues, from the N-terminus to the C-terminus:

a first conserved residue of T, S and M; and

a second conserved residue of Y;

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wherein the first and second conserved residues are separated by 6 to 7 residues.

5        6.    The composition of claim 5, wherein the first conserved residue is at the second position from the N-terminus and the second conserved residue is at the ninth or tenth position from the N-terminus.

10       7.    A composition comprising an immunogenic peptide having an HLA-A1 binding motif, which immunogenic peptide has between 9 and about 10 residues and the following residues, from the N-terminus to the C-terminus.

         a first conserved residue of D, E, A, S and T; and  
         a second conserved residue of Y;

15       wherein the first and second conserved residues are separated by 5 to 6 residues.

20       8.    The composition of claim 5, wherein the first conserved residue is at the third position from the N-terminus and the second conserved residue is at the ninth or tenth position from the N-terminus.

25       9.    A composition comprising an immunogenic peptide having a HLA-A11 binding motif, which peptide has between about 9 and about 10 residues and the following residues, from the N-terminus to the C-terminus:

         a first conserved residue of L, M, I, V, A, S, T, G, N, Q, C, F, D, E; and

30       a second conserved residue of K, R, H;  
         wherein the first and second conserved residues are separated by 6 to 7 residues.

35       10.   The composition of claim 9, wherein the first conserved residue is at the second position from the N-terminus.

         11.   A composition comprising an immunogenic peptide having a HLA-A24.1 binding motif, which immunogenic peptide

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has between ab 9 and ab ut 10 residues the following residues, from the N-terminus to the C-terminus:

a first conserved residue of Y, F, W; and

a sec nd conserved residue of F, I, L, W, M;

5 wherein the first and second conserved residues are separated by 6 to 7 residues.

12. The composition of claim 11, wherein the first conserved residue is at the second position from the  
10 N-terminus.

13. A composition comprising an immunogenic peptide having an HLA-A3.2 binding motif, which immunogenic peptide has 9 or 10 residues:

15 a first conserved residue at the second position selected from the group consisting of A, I, L, M, T, and V; and a second conserved residue at the C terminal postion selected from the group consisting of K and R.

20 wherein the first and second conserved residues are separated by 6 to 7 residues.

14. A composition comprising an immunogenic peptide having an HLA-A11 binding motif, which immunogenic peptide has 9 or 10 residues and the following residues, from the  
25 N-terminus to the Cterminus:

a first conserved residue at the second position from the N terminus selected from the group consisting of A, I, L, M, T and V; and

30 a second conserved residue at the C terminal position selected from the group consisting of K;

wherein the first and second conserved residues are separated by 6 to 7 residues.

15. A pharmaceutical composition comprising a  
35 pharmaceutically acceptable carrier and an immunogenic peptide having a HLA-A3.2 binding motif, which immunogenic peptide has between about 9 and about 10 residues and the following r sidues, from the N-terminus to the C-terminus:

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a first conserved residue selected from the group consisting of L, M, I, V, S, A, T, F, C, G, D and E; and a second conserved residue of K, R and Y; wherein the first and second conserved residues are separated by 6 to 7 residues.

16. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an immunogenic peptide having a HLA-A1 binding motif, which immunogenic peptide has between about 9 and about 10 residues and the following residues, from the N-terminus to the C-terminus:

a first conserved residue of T, S and M; and  
a second conserved residue of D, E, A, S and T;  
a third conserved residue of Y;

wherein the first and second conserved residues are separated by 1 residue and the second and third conserved residues are separated by 5 or 6 residues.

17. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an immunogenic peptide having a HLA-A1 binding motif, which immunogenic peptide has between about 9 and about 10 residues and the following residues, from the N-terminus to the C-terminus:

a first conserved residue of T, S or M; and  
a second conserved residue of Tyr;

wherein the first and second conserved residues are separated by 6 to 7 residues.

18. A pharmaceutical composition comprising a pharmaceutically acceptable carrier and an immunogenic peptide having a HLA-A1 binding motif, which peptide has between about 9 and about 10 residues and the following residues, from the N-terminus to the C-terminus:

a first conserved residue of D, E, S, T; and  
a second conserved residue of Y;

wherein the first and second conserved residues are separated by 5 to 6 residues.

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19. pharmaceutical composition comprising a pharmaceutically acceptable carrier and an immunogenic peptide having a HLA-A24.1 binding motif, which peptide has  
a first conserved residue of Y, F, W; and  
a second conserved residue of F, I, L, W, or m;  
wherein the first and second conserved residues are separated by 6 to 7 residues.

20. A method of identifying an immunogenic peptide comprising the following steps:  
determining a binding motif for an MHC molecule encoded by a preselected MHC Class I allele;  
screening an amino acid sequence of an antigenic protein for the presence of the binding motif;  
selecting a sequence in the antigenic protein having the binding motif;  
preparing a test peptide of about 8 and about 11 residues comprising the selected subsequences;  
determining the ability of the test peptide to bind to the preselected MHC allele and induce a CTL response, thereby identifying immunogenic peptides.

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